

REMARKS

Claims 1 and 3-10 are pending. Claims 1, 5, 6, 9 and 10 have been amended. No new matter has been introduced. Reexamination and reconsideration of the present application are respectfully requested.

In the May 7, 2008 Office Action, the Examiner objected to specification. Applicants have amended claims 6, 9 and 10 in view of the Examiner's comments to provide language consistent with that included in the specification. Accordingly, Applicant respectfully requests that the Examiner withdraw the objection.

The Examiner rejected claims 1 and 3-10 under 35 U.S.C. § 112, second paragraph as being indefinite. Applicant has amended claims 1, 5, and 6 in view of the Examiner's comments. As such, Applicant believes that claims 1 and 3-10 are definite. Accordingly, Applicant respectfully requests that the Examiner withdraw the rejection under §112, second paragraph.

The Examiner rejected claims 1 and 3-10 under 35 U.S.C. § 103 (a) as being unpatentable over Okamoto, U.S. Patent No. 5,559,298 (hereinafter Okamoto) in view of Lee, U.S. Patent No. 6,292,440 (hereinafter Lee). Applicant respectfully traverses the rejections in view of the claims as amended.

**Independent claim 1, as amended, recites:**

A tone generator system comprising:  
a first waveform storage that stores compressed waveform data, the compressed waveform data being compressed in *a compression method for compressing waveform data in units of a frame comprised of a plurality of samples encoded with one of MPEG-1 Audio Layer 3 (MP3), MPEG-2, Advanced Audio Coding (AAC), or Adaptive Transform Acoustic Coding (ATRAC)*;  
a second waveform storage;  
a sequencer that sequentially receives and interprets a series of messages included in a musical composition file;  
a decoder that, *when said sequencer interprets a program change message into*

*tone color changing instruction data including a channel number indicative of a channel and a program number indicative of a tone color*, reads out from said first waveform storage the compressed waveform data based on the program number included in the supplied tone color changing instruction data, decodes the readout compressed waveform data into waveform data in a pulse code modulation format, and stores the decoded waveform data in the pulse code modulation format into said second waveform storage; and

*a tone generator section that, when said sequencer interprets a note-on message following the program change message into sounding instruction data including the channel number*, reads out from said second waveform storage the waveform data in the pulse code modulation format and generates musical tones based on the readout waveform data in the pulse code modulation format, *wherein said decoder starts to at least read out the compressed waveform data before said tone generator section starts to generate the musical tones so as to prevent a delay in generating the musical tones.*

The Okamoto reference does not disclose, teach or suggest the tone generator system specified in independent claim 1, as amended. As the Examiner has acknowledged, Okamoto does not disclose “a first waveform storage that stores compressed waveform data, the compressed waveform data being compressed in a *compression method for compressing waveform data in units of a frame comprised of a plurality of samples encoded with one of MPEG-1 Audio Layer 3 (MP3), MPEG-2, Advanced Audio Coding (AAC), or Adaptive Transform Acoustic Coding (ATRAC).*”

In addition, Okamoto fails to disclose, teach, or suggest “a decoder that, *when said sequencer interprets a program change message into tone color changing instruction data including a channel number indicative of a channel and a program number indicative of a tone color*, reads out from said first waveform storage the compressed waveform data based on the program number included in the supplied tone color changing instruction data, decodes the readout compressed waveform data into waveform data in a pulse code modulation format, and stores the decoded waveform data in the pulse code modulation format into said second waveform storage” and “a tone

generator section that, *when said sequencer interprets a note-on message following the program change message into sounding instruction data including the channel number*, reads out from said second waveform storage the waveform data in the pulse code modulation format and generates musical tones based on the readout waveform data in the pulse code modulation format, *wherein said decoder starts to at least read out the compressed waveform data before said tone generator section starts to generate the musical tones so as to prevent a delay in generating the musical tones.”*

Okamoto is related to implementing manual performance processing based on manual performance operation performed in a key board. Okamoto discloses a CPU 11 of the electronic musical instrument which fetches a key-ON or key-OFF signal from a keyboard 14, and acquires a key number and touch data for a key where an event has occurred. Based on these data, the CPU 11 transmits a tone generation parameter read from a program ROM 12 to a tone generation system 17, thereby producing a musical tone. (*Okamoto, Col. 4, lines 7-16*)

In Okamoto, upon receipt of a tone generation parameter and a tone production start command from a CPU 11, the tone generation system 17 reads out waveform data stored in a primary ROM 20 and performs waveform interpolation (*Okamoto Col. 4, lines 54 - 59*). Moreover, waveform data are read from the waveform ROM 20 in accordance with musical instrument data, which are designated through manual operation on panel switches by a user, and timbre data, which correspond to a current tone generation time (step S1), interpolation interval data that correspond to a timbre are read from a interpolation interval ROM 21 (step S2), and interpolation is performed on the read-out

timbre waveforms by employing the interpolation interval data (step S3) so that the electronic musical instrument generates musical tones using the interpolated waveform data in accordance with a key-on signal generated through manual operation on a keyboard 14 (*Okamoto, Col. 6, lines 1 - 27*). As such, Okamoto merely discloses an electronic musical instrument generating musical tones based on manual performance operation on the keyboard.

On the other hand, independent claim 1, as amended is directed to a tone generator system which performs an automatic musical tone generation process based on the musical composition file by making the sequencer interpret a series of messages included in the musical composition file. According to the tone generator system recited in claim 1, as amended, when the sequencer interprets the program change message, the decoder reads out from the first waveform storage the compressed waveform data encoded with one of MP3, MPEG-2, AAC or ATRAC, decodes the readout compressed waveform data into waveform data in the pulse code modulation format, and stores the decoded waveform data into the second waveform storage, and when the sequencer interprets a note-on message following the program change message, the tone generator section reads out from the second waveform storage the waveform data in the pulse code modulation format and generates musical tones.

However, Okamoto does not disclose, teach, or suggest operations including a sequencer's interpretation of a program change message and the sequencer's interpretation of a note-on message following the program change message. Therefore, Okamoto does not disclose, teach, or suggest "a decoder that, *when said sequencer*

*interprets a program change message into tone color changing instruction data including a channel number indicative of a channel and a program number indicative of a tone color, reads out from said first waveform storage the compressed waveform data based on the program number included in the supplied tone color changing instruction data, decodes the readout compressed waveform data into waveform data in a pulse code modulation format, and stores the decoded waveform data in the pulse code modulation format into said second waveform storage" (hereinafter the "decoder limitation") and "a tone generator section that, when said sequencer interprets a note-on message following the program change message into sounding instruction data including the channel number, reads out from said second waveform storage the waveform data in the pulse code modulation format and generates musical tones based on the readout waveform data in the pulse code modulation format, wherein said decoder starts to at least read out the compressed waveform data before said tone generator section starts to generate the musical tones so as to prevent a delay in generating the musical tones" (hereinafter the "tone generator section limitation"). Accordingly, Applicant respectfully submits that independent claim 1, as amended distinguishes over Okamoto.*

The Lee reference does not make up for the deficiencies of Okamoto. The Lee reference is directed to an MP3 Car player. (*Lee, Col. 1, lines 6-13*) However, the combination of Okamoto and Lee does not disclose, teach, or suggest the decoder limitation or the tone generator section limitation.

Furthermore, Applicant further notes that it would not have been obvious to one

ordinary skill in the art to combine the teachings of Okamoto and Lee to reach the system recited in independent claim 1, as amended. In the system specified in independent claim 1, waveform data encoded with one of MP3, MPEG-2, AAC or ATRAC and compressed in units of a frame comprised of a plurality of samples is used. Using waveform data compressed in units of a frame is advantageous because it provides high musical quality and high compression rate, but it takes a long time to decode the waveform data. In order to cope with this disadvantage, in the present invention, "the compressed waveform data encoded with one of MP3, MPEG-2, AAC or ATRAC is read out from the first waveform storage in accordance with the program change message, the readout compressed waveform data is decoded into waveform data in the pulse code modulation format, and the decoded waveform data is stored into the second waveform storage in advance". That is, a series of processes comprising reading out compressed waveform data, decoding the readout compressed waveform data and storing the decoded waveform data, performed by the decoder is started upon the reception of a program change message existing prior to the note-on message, instead of starting upon reception of the note-on message. As a result, at least part of the series of processes to be performed by the decoder starts at the beginning of interpretation of the note-on message. Accordingly, musical tone generation is performed without delay.

In the electronic musical instrument disclosed in Okamoto, waveform data compressed in units of a frame is never used. Moreover, Okamoto neither discloses nor suggests a disadvantage of a delay due to decoding waveform data. Lee also never discloses a disadvantage of a delay due to decoding waveform data. As a result, the combination of Okamoto and Lee cannot attain the characteristic operation in which at

least reading out the compressed waveform data is started before the generation of the musical tones is started so as to prevent a delay in generating the musical tones, as specified in the present claims.

In addition, Lee discloses a MP3 file in which audio data, corresponding to a piece of music, is compressed. However, this MP3 file differs completely from waveform data determining tone color used in synthesizing musical tones having respective tone colors by using MIDI data. Accordingly, it is not obvious to combine the teachings of Okamoto and Lee to reach the system recited in independent claim 1, as amended.

Independent claims 5 and 6 recite limitations similar to those in independent claim 1, as amended. Accordingly, Applicant respectfully submits that independent claims 5 and 6 distinguish over Okamoto in combination with Lee for reasons similar to those set forth above with respect to independent claim 1, as amended.

Claims 3-4, 7-8, and 9-10 depend from independent claims 1, 5, and 6, respectively. Accordingly, Applicant respectfully submits that claims 3-4, 7-8, and 9-10 distinguish over Okamoto in combination with Lee for the same reasons set forth above with respect to independent claims 1, 5, and 6, respectively.

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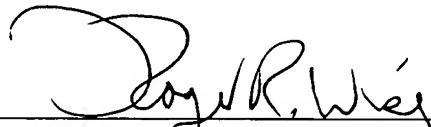
In view of the foregoing amendment and remarks, Applicant believes that the claims are in condition for allowance. If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles, California telephone number (213) 488-7100 to discuss the steps necessary for placing the application in condition for allowance should the Examiner believe that such a telephone conference call would advance prosecution of the application.

Respectfully submitted,

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